

Docket No. 740756-2670

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ABSTRACT OF THE DISCLOSURE

When a gettering sink is removed by using alkaline solution of etchant having a high selectivity to the gettering sink and a barrier film functioning as an etching stopper, residue of gettering is left. However, according to the present invention, a semiconductor film that serves as a gettering sink contains nitrogen at concentration ~~is of~~ of  $1 \times 10^{18}$  atoms/cm<sup>3</sup> or lower, oxygen at concentration ~~is of~~ of  $8 \times 10^{19}$  atoms/cm<sup>3</sup> or lower, and noble gas at concentration ~~is of~~ of  $1 \times 10^{20}$  atoms/cm<sup>3</sup> or higher. In order to achieve the above-described impurity concentrations, a concentration of oxygen that is an impurity element in a chamber is reduced by using a flammable gas for heating and exhausting oxygen.

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